Meta-analysis of neoadjuvant treatment modalities and definitive non-surgical therapy for oesophageal squamous cell cancer.

Abstract:
The standard treatment for resectable oesophageal squamous cell carcinoma (OSCC) is surgical resection with adequate lymphadenectomy. Most Western patients receive neoadjuvant chemotherapy or chemoradiotherapy (CRT). In recent years some patients have received CRT alone (definitive CRT, dCRT). This meta-analysis sought to clarify the benefits of neoadjuvant and definitive treatment for OSCC. Eligible randomized controlled trials (RCTs) were identified using the Cochrane database, MEDLINE and Embase. Only RCTs with intention-to-treat analysis, and published hazard ratios (HRs) or estimates from survival data, were included. Nine RCTs involving neoadjuvant CRT versus surgery, eight involving neoadjuvant chemotherapy versus surgery, and three involving neoadjuvant treatment followed by surgery or surgery alone versus dCRT were identified. The HR for overall survival was 0.81 (95 per cent confidence interval 0.70 to 0.95; P = 0.008) after neoadjuvant CRT and 0.93 (0.81 to 1.08; P = 0.368) after neoadjuvant chemotherapy. The likelihood of R0 resection was significantly higher after neoadjuvant treatment (CRT: HR 1.15, P = 0.043; chemotherapy: HR 1.16, P = 0.006). Morbidity rates were not increased after neoadjuvant CRT (HR 0.94, P = 0.363) but 30-day mortality was non-significantly higher with combined treatment. Morbidity (HR 1.03, P =
0.638) and mortality (HR 1.04, P = 0.810) rates after neoadjuvant chemotherapy and surgery did not differ from those after surgery alone. None of the RCTs reporting outcome after dCRT demonstrated a significant survival benefit, but treatment-related mortality rates were lower (HR 7.60, P = 0.007) than with neoadjuvant treatment followed by surgery or surgery alone. For patients with resectable OSCC, a significant survival benefit for neoadjuvant CRT was evident, with no increase in morbidity rate. dCRT did not demonstrate any survival benefit over other curative strategies. Copyright © 2011 British Journal of Surgery Society Ltd. Published by John Wiley & Sons, Ltd.